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10/678,072	10/06/2003	Moon-Sik Kim	27427.011.00-US	4073

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EXAMINER
RIELLEY, ELIZABETH A

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	**Application No.** 10/678,072	**Applicant(s)** KIM ET AL.	
	Examiner Elizabeth A. Rielley	**Art Unit** 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 17 August 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 17 August 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Amendment filed 8/17/05 has been entered and considered by the Examiner. Currently, claims 1-17 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Say (US 4766344).

In regard to claim 1, Say teaches an electron gun for a color CRT (abstract) comprising a triode unit for generating three electron beams (25, 27, 29; figure 1; column 2 line 66 – column 3 line 5) and controlling and accelerating the generated electron beams (column 3 lines 20-25); a main focusing lens unit that focuses the electron beams generated by the triode unit (41; column 5 lines 30-40); a first electrostatic screen grid (31) installed in the main focusing lens unit (23; the gun assembly, as described by Say, is equivalent to the description of the Applicant's "main focusing lens unit") having three electron beam through holes (40a, 39, 40b) linearly-arranged for passing the three electron beams and two of the holes are external holes (40a, 40b) and the first grid having a first oval shaped hole that passes all three electron beams (column 1 lines 26-30), the first oval shaped hole spaced a distance d1 from the through holes; and a second electrostatic screen grid (33; column 4 lines 55-65) installed in the main focusing lens unit (23) having three electron beam through holes linearly arranged for passing the three electron beams (49, 50a, 50b; figure 4) and two of the holes are external holes (50a,b) and the second grid having a second oval shaped hole that passes all three electron beams (column 1 lines 26-30), the second oval shaped hole spaced a distance d2 from the through holes; wherein the first grid external holes have an external distance HL1 and an internal distance HR1 (column 5 lines 30-40) and the second grid external holes have an external distance HL2 and an internal distance HR2 (column 4 lines 56-62); and wherein HL1 (0.095 inch) is greater that HR1 (0.070 inch), HL2 (0.132 inch) is greater than HR2 (0.115 inch), d1 (Say uses the reference character "w" in figure 3 for d1; 0.044 inch; column 4 line 55) is greater than d2 (Say uses the reference character "w" for the second electrostatic screen grid 33 for d2; 0.030 inch; column 4 line 62), HL2 (0.115 inch) is greater than HL1 (0.095 inch) and HL2+HR2 (0.132+0.115 =0.247 inch) is greater than HL1+HR1 (0.095+0.070=0.165 inch).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-6, 8, 10-13, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Say ('344) in view of Gerlach (US 4626738).

In regard to claim 2, Say ('344) teaches a color cathode ray tube (11; figure 1; column 2 lines 55-56) comprising a front panel (17), a funnel coupled to the panel (15); a fluorescent screen formed on an inside surface of the panel (19); a shadow mask with a color selection function, the shadow mask being disposed at a predetermined distance from the fluorescent screen (21; column 2 lines 55-65); and an electron gun for a color CRT (abstract) comprising a triode unit for generating three electron beams (25, 27, 29; figure 1; column 2 line 66 – column 3 line 5) and controlling and accelerating the generated electron beams (column 3 lines 20-25); a main focusing lens unit that focuses the electron beams generated by the triode unit (41; column 5 lines 30-40); a first electrostatic screen grid (31) installed in the main focusing lens unit (23; the gun assembly, as described by Say, is equivalent to the description of the Applicant's "main focusing lens unit") having three electron beam through holes (40a, 39, 40b) linearly-arranged for passing the three electron beams and two of the holes are external holes (40a, 40b) and the first grid having a first oval shaped hole that passes all three electron beams (column 1 lines 26-30), the first oval shaped hole spaced a distance d1 from the through holes; and a second electrostatic screen grid (33; column 4 lines 55-65) installed in the main focusing lens unit having three electron beam through holes linearly arranged for passing the three electron beams (49, 50a, 50b; figure 4) and two of the holes are external holes (50a,b) and the second grid having a second oval shaped hole that passes all three electron beams (column 1 lines 26-30), the second oval shaped hole spaced a distance d2 from the through holes; wherein the first grid external holes have an external distance HL1 and an internal distance HR1 (column 5 lines 30-40) and the second grid external holes have an external distance HL2 and an internal distance HR2 (column 4 lines 56-62); and wherein HL1 (0.095 inch) is greater that HR1 (0.070 inch), HL2 (0.132 inch) is greater than HR2 (0.115 inch), d1 (Say uses the reference character "w" in figure 3 for d1; 0.044 inch; column 4 line 55) is greater than d2 (Say uses the reference character "w" for the second electrostatic screen grid 33 for d2; 0.030 inch; column 4 line 62), HL2 (0.115 inch) is greater than HL1 (0.095 inch) and HL2+HR2 (0.132+0.115 =0.247 inch) is greater than HL1+HR1 (0.095+0.070=0.165 inch). Say ('344) does not teach the front panel made from glass. Gerlach teaches a front panel of a color CRT screen made of glass (2; figure 1; column 3 lines 53-54). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify Say ('344) in view of Gerlach ('738) in order to give the CRT a longer life span.

In regard to claim 3, Say (344) in view of Gerlach ('738) teaches all the limitations set forth, as described above, including Gerlach ('738) teaching a plurality of cathodes for emitting electron beams (21, 22, 23; column 4 lines 8-9). Say ('344) discloses a control grid (31; column 3 line 12) and an accelerating grid (33; column 3 line 14). The motivation for combining is the same as above.

In regard to claim 4, Say (344) in view of Gerlach ('738) teaches all the limitations set forth, as described above, including the main lens unit includes a plurality of focusing grids (say '344; 31; column 3 lines 6-19); an anode for focusing the electron beam onto a screen and forming a main focusing lens (Gerlach '738; 24; column 4 lines 5-42). Motivation for combining is the same as above.

In regard to claim 5, Gerlach ('738) teaches a first electrostatic screen grid (32) installed in the focusing grid (25) and a second electrostatic screen grid installed in the anode (24; figure 2). Motivation for combining is the same as above.

In regard to claim 6, Say ('344) teaches a ratio HL2/HR2 (column 4 lines 49-55; 0.125/0.108) is greater than a ration HL1/HR1 (column 4 lines 56-63; .0.132/0.115).

In regard to claim 8, Say ('344) teaches a ratio HL2/HR2 (column 4 lines 49-55; 0.125/0.108) is greater than a ration HL1/HR1 (column 4 lines 56-63; .0.132/0.115)

In regard to claim 10, Say ('344) teaches a ratio HL2/HL1 is greater than about 1.03 (0.132/0.125; column 4 lines 49-63).

In regard to claim 11, Say ('344) teaches a ratio HL2/HL1 is less than about 1.05 (0.100/0.095; column 5 lines 30-50).

In regard to claim 12, Say ('344) teaches a ratio HL2/HL1 is greater than about 1.02 (0.132/0.125; column 4 lines 49-63).

In regard to claim 13, Say ('344) teaches a ratio HL2/HL1 is less than about 1.06 (0.100/0.095; column 5 lines 30-50).

In regard to claim 16, Say ('344) teaches the external holes of the electrostatic screen grids consist of a combination of plurality of circular arcs having different radii of curvature (column 3 lines 30-52).

In regard to claim 17, Gerlach ('738) teaches the external holes of the electrostatic screen grids consist of a combination of a plurality of straight lines (figure6; column 6 lines 42-45). Motivation for combining would be for a smaller astigmatism of the electron beams (column 6 lines 12-42).

Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Say ('344) in view of Gerlach ('738) and in further view of Sugawara et al (US 5517078).

In regard to claim 7, Say ('344) in view of Gerlach ('738) discloses all the limitations set further, as described above, except for the ratio HL2/HR2 is about 2.13 and the ration HL1/HR1 is about 1.49. Sugawara et al ('078) discloses a relationship between an external distance and an internal distance in an aperture of an electrostatic screen grid that satisfies the above equations (column 9 lines 40-65). Sugawara et al ('078) clearly defines the relationship of the ration HL2/HR2 and HL1/HR1 as R1>R2 for any radii of electrostatic screen grids for CRTs. Therefore, this relationship between the radii of electrostatic screen grids incorporates the ratio being 2.13 and 1.49, as disclosed by the applicant. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify Say ('344) in view of Gerlach ('738) and in further view of Sugawara et al ('078) in order to improve the characteristics of the beam line which passes though (column 1 lines 5-10).

In regard to claim 9, Say ('344) in view of Gerlach ('738) discloses all the limitations set further, as described above, except for the ratio HL2/HR2 is about 2.13 and the ration HL1/HR1 is about 1.49. Sugawara et al ('078) discloses a relationship between an external distance and an internal distance in an aperture of an electrostatic screen grid that satisfies the above equations (column 9 lines 40-65). Sugawara et al ('078) clearly defines the relationship of the ration HL2/HR2 and HL1/HR1 as R1>R2 for any radii of electrostatic screen grids for CRTs. Therefore, this relationship between the radii of electrostatic screen grids incorporates the ratio being 2.13 and 1.49, as disclosed by the applicant. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify Say ('344) in view of Gerlach ('738) and in further view of Sugawara et al ('078) in order to improve the characteristics of the beam line which passes though (column 1 lines 5-10).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Say ('344) in view of Gerlach ('738) and in further view of Zeiss (GB002052847).

Say ('344) in view of Gerlach ('738) disclose all the limitations set forth as described above except a magnetic field acting on the electron beams between the triode unit and the main focusing lens unit. Zeiss ('847) teaches a magnetic field unit (1,2) acting on the electron beams between the triode unit and the main focusing lens unit. It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Say ('344) in view of Gerlach ('738) and in further view of Zeiss ('847) in order to further direct the electron beams to their appropriate target.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Say ('344) in view of Gerlach ('738) and in further view of Lee (US 6545403).

Say ('344) in view of Gerlach ('738) disclose all the limitations set forth as described above except the length of the second oval shaped hole is greater than the length of the first oval shaped hole. Lee ('403) teaches that the length of the second oval shaped hole is greater than the length of the first oval shaped hole (figure 10b). It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Say ('344) in view of Gerlach ('738) and in further view of Lee ('403) in order to further direct the electron beams to their appropriate target.

Response to Arguments

Applicant's arguments filed 8/17/05 have been fully considered but they are not persuasive.

In regard to Applicant's argument that Say ('344) fails to disclose the first electrostatic screen grid installed in the main focusing lens unit, the Examiner respectfully disagrees. Say teaches a main focusing electrode (31) and an accelerating electrode (33) within a gun assembly (23). Say does not explicitly teach that the main focusing electrode (31) and the accelerating electrode (33) are a combined "main focusing lens unit", as described by the Applicant. However, it is the Examiners position that the electrodes function as the main focusing lens unit claimed by the Applicant, for it is well known in the art that a main focusing lens is comprised of two electrodes, an accelerating and a focusing electrode (see Hughes et al, US 4370592; column 1 lines 18-21). Further, each Applicant may be his own lexicographer; therefore different terminologies for the same concept must be taken into account when reading patents and applications. Hence, the focusing electrode (31) and the accelerating electrode (33) located with in the gun assembly (23) are a main focusing lens unit that reads on the Applicant's limitation.

In regard to Applicant's argument that Say fails to teach a distance between the oval shaped hole and through hole, the Examiner respectfully disagrees. Say teaches a distance between a first oval shaped hole (39; figure 3) and a through hole (40a, 40b) in a first electrostatic screen grid (figure 3) labeled 'w'. The width of the wall denotes the distance from a first oval shaped hole (39) and a through hold (either 40a or 40b) within a first electrostatic screen grid (figure 3).

In regard to Applicant's argument that Sugawara fails to suggest the ratio of HL2/HR2 is about 2.12 or 1.49, the Examiner respectfully disagrees. Sugawara teaches the ration HL2/HR2 > 0 (column 9 lines 40-65) which includes 2.12 and 1.49.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Rielley
Elizabeth Rielley

Examiner
Art Unit 2879

10/28/05
MARICELI SANTIAGO
PRIMARY EXAMINER